MAY, MDCCCLXIV.

THE ZOOLOGIST:

A

POPULAR MONTHLY MAGAZINE

OF

NATURAL HISTORY,

AND

JOURNAL FOR RECORDING FACTS AND ANECDOTES

RELATING TO

QUADRUPEDS, BIRDS, REPTILES, FISHES, MOLLUSKS,
INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,
MIGRATIONS, NESTS AND YOUNG.

No. CCLXX.

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On the 1st of June, 1864, will be published (price 6d.), 24 pages 8vo,
No. 1 of

THE ENTOMOLOGIST'S MONTHLY MAGAZINE: conducted by T. Blackburn, H. G. Knaggs, M.D., R. M'Lachlan, F.L.S., E. C. Rye, H. T. Stainton, F.L.S.

All communications to be addressed to "The Editors of the *Entomologist's Monthly Magazine*," care of

John Van Voorst, 1, Paternoster Row, London, E.C.

FEN INSECTS.

JAMES COCKING begs to inform the numerous applicants who replied to his notice (see 'Zoologist' for April) that the Insects will consist of LEPIDOPTERA and COLEOPTERA in Ten Shares, being all that is wanted. The other Collections will consist of SHELLS, FOSSILS and EGGS, Gentlemen stating which Collection they subscribe for. The Subscription, One Guinea, to be paid in advance. A List of all the Subscribers to be sent to each one on the 15th of May, and all the Insects to be shared in November next; so also with the other Collections. There remain a few more shares to be taken. Happy to give any information on receipt of an addressed envelope.—JAMES COCKING, *Ranworth Fen, Norwich.*

TO EGG COLLECTORS.

MR. J. C. STEVENS will Sell by Auction, at his Great Rooms, 38, King Street, Covent Garden, on Thursday, May 19th, at One o'Clock precisely, SOME RARE and WELL-AUTHENTICATED EGGS, sent from LAPLAND, during the last Two Years, by the Collectors instructed and formerly employed by the late Mr. JOHN WOLLEY. The Eggs will be on view the day before and Morning of Sale, and Catalogues may be had on application (if by Letter enclosing a Postage Stamp) to the Auctioneer, 38, King Street, Covent Garden, London, W.C.

Notes on the Ornithology of Norfolk.

By Henry Stevenson, Esq.

The reputation which this county has always maintained as being one of the richest ornithological districts in the United Kingdom, is quite unaffected by those local causes which have of late years altered the habits of many of our resident species. Not only is its bold projecting coast-line, extending from Yarmouth on the extreme eastern point to Hunstanton and Lynn on the north-west, peculiarly favourable for the advent of all migratory species, but the variety of attractions presented by the diversity of the soil and sudden transitions from one formation to another, are such, perhaps, as can be nowhere equalled in the same extent of country. On the coast itself we find a strange alternation of sand and shingly beaches, salt marsh, cultivated land, and low sandy hills, or lofty cliffs, with rich grassy summits and thick woods, in close vicinity to the sea. Besides which, to a very large proportion of our migratory visitants, the tidal channels of Breydon, Blakeney and Lynn present, at low water, from their wide extent of mud banks, an inexhaustible supply of food; and, more inland, the shallow waters and reedy margins of the "Broads," surrounded by large tracts of luxuriant marshes, form the natural resort, both in winter and summer, of many of the aquatic tribes. To the natural advantages, therefore, of the locality itself, the fact that the number of species included in the *avifauna* of Norfolk has increased rather than diminished, of late years, is mainly attributable. Messrs. Gurney and Fisher, in their "Account of the Birds found in Norfolk," published in the 'Zoologist' for 1846, give the total number of species at that time as 277; and, even omitting one or two birds, hitherto included on insufficient authority, the total number at the present time amounts to 293. It is, however, in the nesting habits of many residents, and the absence during the summer months of others, which formerly remained to breed in this county, that we really find the changes which have been effected by local causes during the last twenty or thirty years.

Civilization and cultivation go hand-in-hand, and as the necessities of our largely-increased population demand still greater exertions to supply the required food, the wild denizens of the marsh recede before the rapid inroads of the plough, drainage on all sides narrows their boundaries, and, as surely as the waving corn crops succeed the feathery reed-stems, the call of the partridge takes the place of the redshank's whistle and the drumming noise of the snipe. Salt marshes reclaimed, no longer afford feeding-grounds for the various wild fowl; and the very repairs necessary to prevent the encroachments of the sea are a constant source of disturbance to such species as formerly bred in the vicinity of the coast. The general enclosure of commons and waste lands has likewise, in its turn, affected other classes of birds, as well as the thinning of hedge-rows and other farming operations resulting of late years from an improved system of agriculture. To the latter cause may, in some degree, be attributed the much-to-be-regretted extinction of the great bustard in Norfolk, its last abiding place in the whole kingdom. The adoption of horse-hoeing, undoubtedly, facilitated the discovery of its nests and eggs amongst the spring corn (most of them being found in fields of rye), and the high price given for the eggs, which, for the most part, were placed under hens and hatched, with the hope of rearing the young birds, caused them to be taken whenever met with. The last bustard killed in this county was a female obtained at Lexham, near Swaffham, in 1838, the remnant of a small flock of hens, which had for some years frequented that neighbourhood; but no male birds then existing, their eggs were dropped about at random during the breeding season, and thus the whole race became entirely extinct. As an accidental migrant, can it alone be included in the "Norfolk List" at the present time, specimens having occurred here, as in other counties, which may fairly be considered as migratory visitants. Drainage and cultivation, however, but share with other causes a common result; the great increase of gunners, owing to the cheapness of fire-arms, and the ready means of transit by rail to almost all parts of the county (the iron road itself traversing between Norwich and Yarmouth some of the finest snipe marshes of former days), have done much towards completing that exterminating system which years of indiscriminate egging was fast effecting by itself. Rather may we wonder that so much still remains to the sportsman and naturalist than that so many familiar forms have ceased to appear, except as temporary sojourners on their migratory course.

There is one group of birds, however, which demands a somewhat separate notice, its persecutions arising from a very different cause. No falcon, hawk, harrier or buzzard can long expect to escape the doom of its race in a strictly game-preserving district like the county of Norfolk; and scarcely can it be said that any birds of this class but the kestrel and sparrowhawk are still resident amongst us, although the nests of all three of the harriers are occasionally found in the neighbourhood of the Broads. The tawny and barn owls are both far less common than they used to be, and the shorteared owl, though a regular autumnal migrant, has ceased almost entirely to nest in our fens, so many of its former haunts no longer existing in their normal state. The longeared owl, on the contrary, at one time scarce, has, through the great increase in our fir plantations, become a pretty numerous resident amongst us, in spite of its nests being systematically plundered. But if the Raptores have suffered at the hands of the gamekeeper (and included alike in his list of "feathered vermin" are the raven, the magpie and the carrion crow), the smaller insessorial birds, more especially the warblers that visit us in summer, are benefited greatly through the care of the game. The dense woods afford both food and shelter, and their own little nests are safe from prying eyes, since no intruding footstep is allowed to scare the sitting pheasants. This is perhaps the only class which can really be said to have benefited by recent changes, for if the marked decrease in our birds of prey has caused a corresponding increase amongst the finches, buntings and larks, the barbarous and unreasoning system of slaughter so recently adopted, by means of poisoned wheat, bid fair to effect at one time the same lamentable state of things that now exists in France. The warning, however, received from that country has roused the friends of the "little bird" amongst us, and the various appeals in its favour that have appeared in our metropolitan and provincial journals have been happily supplemented by legislative enactments tending to the preservation of the feathered tribes. "Man cannot do without the bird" as an insect-eater, and although, when undiminished in the natural way, their numbers become a serious tax upon the farmer's corn, there are and always have been legitimate and effectual means for thinning their ranks without involving in one general massacre the useful and the mischievous—the rook and the sparrow, and often, though quite unintentionally, the partridge as well.

Whitetailed Eagle. Autumn and winter migrant.*
Osprey. Spring and autumn migrant.
Greenland Falcon. Accidental.†
Peregrine Falcon. Spring and autumn migrant.
Hobby. Summer migrant, breeding here occasionally.
Redfooted Falcon. Accidental.
Merlin. Spring and autumn migrant.

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* Amongst autumn and winter migrants are included most of the gulls, but although some birds of this tribe are seen on the coast nearly all the year round, they do not (with the exception of the blackheaded gull) breed here, and cannot therefore be classed as residents.

† Accidental; very rare, or such as have occurred but a few times irregularly.

Kestrel. Resident, receiving migratory additions in autumn and winter.

Goshawk. Occasional spring and autumn migrant.

Sparrowhawk. Resident, receiving migratory additions in autumn and winter.

Kite. Accidental.

Common Buzzard. Spring and autumn migrant.

Roughlegged Buzzard. Spring and autumn migrant.

Honey Buzzard. Occasional spring and autumn migrant.

Marsh Harrier. Resident, receiving migratory additions in autumn and winter.

Hen Harrier. Spring and autumn migrant, occasionally breeding here.

Montagu's Harrier. Spring and autumn migrant, occasionally breeding here.

Scops Eared Owl. Accidental.

American Mottled Owl. Accidental.

Longeared Owl. Resident, receiving migratory additions in autumn and winter.

Shorteared Owl. Spring and autumn migrant, occasionally breeding here?

Barn Owl. Resident.

Tawny Owl. Resident.

Snowy Owl. Accidental.

Little Owl. Accidental.

Tengmalm's Owl. Accidental.

Great Gray Shrike. Irregular migrant.

Redbacked Shrike. Summer migrant, breeding here.

Woodchat Shrike. Accidental.

Spotted Flycatcher. Summer migrant, breeding here.

Pied Flycatcher. Spring and autumn migrant, occasionally breeding here.

Common Dipper. Accidental.

Missel Thrush. Resident, receiving migratory additions in autumn and winter.

Fieldfare. Winter migrant.

Song Thrush. Resident, receiving migratory additions in autumn and winter.

Redwing. Winter migrant.

Blackbird. Resident, receiving migratory additions in autumn and winter.

Ring Ouzel. Spring and autumn migrant, occasionally breeding here.

Golden Oriole. Accidental.

Hedgesparrow. Resident.

Redbreast. Resident.

Bluethroated Warbler. Accidental.

Redstart. Summer migrant, breeding here.

Black Redstart. Accidental.

Stonechat. Summer migrant, breeding here.

Whinchat. Summer migrant, breeding here.

Wheatear. Summer migrant, breeding here.

Grasshopper Warbler. Summer migrant, breeding here.

Sedge Warbler. Summer migrant, breeding here.

Savi's Warbler. Accidental.

Reed Warbler. Summer migrant, breeding here.

Nightingale. Summer migrant, breeding here.

Blackcap Warbler. Summer migrant, breeding here.

Garden Warbler. Summer migrant, breeding here.

Common Whitethroat. Summer migrant, breeding here.

Lesser Whitethroat. Summer migrant, breeding here.

Wood Warbler. Summer migrant, breeding here.

Willow Warbler. Summer migrant, breeding here.

Chiffchaff. Summer migrant, breeding here.

Dartford Warbler. Accidental.

Goldencrested Regulus. Resident, receiving migratory additions in autumn and winter.

Firecrested Regulus. Accidental.

Great Tit. Resident, receiving migratory additions in autumn and winter.

Blue Tit. Resident.

Cole Tit. Resident.

Marsh Tit. Resident, receiving migratory additions in autumn and winter.

Longtailed Tit. Resident.

Bearded Tit. Resident.

Bohemian Waxwing. Occasional winter migrant.

Pied Wagtail. Resident, receiving migratory additions in autumn and winter.

Gray Wagtail. Winter migrant.

Grayheaded Wagtail. Accidental.

Ray's Wagtail. Summer migrant, breeding here.

Tree Pipit. Summer migrant, breeding here.

Meadow Pipit. Resident, receiving migratory additions in autumn and winter.

Rock Pipit. Winter migrant.

Richard's Pipit. Accidental.

Shore Lark. Accidental.

Sky Lark. Resident, receiving migratory additions in autumn and winter.

Wood Lark. Summer migrant, breeding here.

Lapland Bunting. Accidental.

Snow Bunting. Autumn and winter migrant.

Common Bunting. Resident, receiving migratory additions in autumn and winter?

Blackheaded Bunting. Resident.

Yellow Bunting. Resident, receiving migratory additions in autumn and winter.

Cirl Bunting. Accidental.

Ortolan Bunting. Accidental.

Chaffinch. Resident, receiving migratory additions in autumn and winter.

Brambling. Autumn and winter migrant.

Tree Sparrow. Resident.

House Sparrow. Resident.

Greenfinch. Resident.

Hawfinch. Autumn and winter migrant, occasionally breeding here.

Goldfinch. Resident, receiving migratory additions in autumn and winter.

Siskin. Autumn and winter migrant.

Common Linnet. Resident, receiving migratory additions in autumn and winter.

Mealy Redpole. Autumn and winter migrant.

Lesser Redpole. Resident, receiving migratory additions in autumn and winter.

Twite. Autumn and winter migrant.

Bullfinch. Resident, receiving migratory additions in autumn and winter.

Pine Grosbeak. Accidental migrant?

Common Crossbill. Occasional winter migrant.

Parrot Crossbill. Accidental.

Whitewinged Crossbill. Accidental.

Redwinged Starling. Accidental.

American Meadow Starling. Accidental.

Common Starling. Resident.

Rosecoloured Pastor. Occasional spring and autumn migrant.

Raven. Resident, receiving migratory additions in autumn and winter.

Carrion Crow. Resident, receiving migratory additions in autumn and winter.

Hooded Crow. Autumn and winter migrant.

Rook. Resident.

Jackdaw. Resident.

Magpie. Resident, receiving migratory additions in autumn and winter.

Jay. Resident, receiving migratory additions in autumn and winter.

Nutcracker. Accidental.

Great Black Woodpecker. Accidental.

Green Woodpecker. Resident, receiving migratory additions in autumn and winter?

Great Spotted Woodpecker. Resident, receiving migratory additions in autumn and winter.

Lesser Spotted Woodpecker. Resident, receiving migratory additions in autumn and winter?

Wryneck. Summer migrant, breeding here.

Common Creeper. Resident.

Wren. Resident.

Hoopoe. Spring and autumn migrant.

Nuthatch. Resident.

Cuckoo. Summer migrant, breeding here.

Roller. Accidental.

Bee-eater. Accidental.

Kingfisher. Resident, receiving migratory additions in autumn and winter.

Swallow. Summer migrant, breeding here.

House Martin. Summer migrant, breeding here.

Sand Martin. Summer migrant, breeding here.

Common Swift. Summer migrant, breeding here.

Alpine Swift. Accidental.

Nightjar. Summer migrant, breeding here.

Ring Dove. Resident, receiving migratory additions in autumn and winter.

Stock Dove. Resident.

Turtle Dove. Summer migrant, breeding here.

Common Pheasant. Resident.

Black Grouse. Resident.

Sand Grouse. Accidental.

Common Partridge. Resident.

Redlegged Partridge. Resident, receiving migratory additions in autumn and winter.

Common Quail. Summer migrant, breeding here.

Great Bustard. Accidental.

Little Bustard. Accidental.

Great Plover. Summer migrant, breeding here.

Collared Pratincole. Accidental.

Golden Plover. Spring and autumn migrant.

Common Dotterell. Spring and autumn migrant.

Ring Dotterell. Resident, receiving migratory additions in autumn and winter.

Kentish Plover. Occasional spring and autumn migrant.

Gray Plover. Spring and autumn migrant.

Peewit. Resident, receiving migratory additions in autumn and winter.

Turnstone. Spring and autumn migrant.

Sanderling. Spring and autumn migrant.

Oystercatcher. Resident, receiving migratory additions in autumn and winter.

Common Crane. Accidental.

Common Heron. Resident.

Purple Heron. Accidental.

Great White Heron. Accidental.

Little Egret. Accidental.

Squacco Heron. Accidental.

Little Bittern. Accidental.

Common Bittern. Autumn and winter migrant.

Night Heron. Accidental.

White Stork. Occasional spring and autumn migrant.

White Spoonbill. Occasional spring and autumn migrant.

Glossy Ibis. Accidental.

Common Curlew. Spring and autumn migrant.

Whimbrel. Spring and autumn migrant.

Spotted Redshank. Spring and autumn migrant.

Common Redshank. Resident, receiving migratory additions in autumn and winter.

Green Sandpiper. Spring and autumn migrant.

Wood Sandpiper. Spring and autumn migrant.

Common Sandpiper. Spring and autumn migrant.

Greenshank. Spring and autumn migrant.

Avocet. Accidental.

Blackwinged Stilt. Accidental.

Blacktailed Godwit. Occasional spring and autumn migrant.

Bartailed Godwit. Spring and autumn migrant.

Ruff. Spring and autumn migrant, occasionally breeding here.

Woodcock. Spring and autumn migrant, occasionally breeding here.

Great Snipe. Spring and autumn migrant.

Common Snipe. Resident, receiving migratory additions in autumn and winter.

Jack Snipe. Spring and autumn migrant.

Sabine's Snipe. Accidental.

Brown's Snipe. Accidental.

Curlew Sandpiper. Occasional spring and autumn migrant.

Knot. Spring and autumn migrant.

Buffbreasted Sandpiper. Accidental.

Broadbilled Sandpiper. Accidental.

Little Stint. Spring and autumn migrant.

Temminck's Stint. Occasional spring and autumn migrant.

Pectoral Sandpiper. Accidental.

Dunlin. Spring and autumn migrant.

Purple Sandpiper. Spring and autumn migrant.

Landrail. Summer migrant, breeding here.

Spotted Crake. Summer migrant, breeding here.

Little Crake. Accidental.

Baillon's Crake. Accidental.

Water Rail. Resident, receiving migratory additions in autumn and winter.

Moorhen. Resident.

Coot. Resident.

Gray Phalarope. Occasional autumn and winter migrant.

Rednecked Phalarope. Occasional autumn and winter migrant.

Graylegged Goose. Accidental.

Bean Goose. Autumn and winter migrant.

Pinkfooted Goose. Occasional autumn and winter migrant.

Whitefronted Goose. Winter migrant.

Bernicle Goose. Winter migrant.

Brent Goose. Winter migrant.

Redbreasted Goose. Accidental.

Egyptian Goose. Accidental.

Canada Goose. Accidental.

Mute Swan. Resident.

Hooper. Winter migrant.

Bewick's Swan. Occasional winter migrant.

Polish Swan. Accidental.

Sheldrake. Resident, receiving migratory additions in autumn and winter.

Gadwall. Autumn and winter migrant.

Shoveller. Resident, receiving migratory additions in autumn and winter.

Pintail. Autumn and winter migrant.

Wild Duck. Resident, receiving migratory additions in autumn and winter.

Garganey. Summer migrant, breeding here.

Teal. Resident, receiving migratory additions in autumn and winter.

Wigeon. Autumn and winter migrant.

Eider Duck. Accidental.

Stellar's Western Duck. Accidental.

King Duck. Accidental.

Velvet Scoter. Occasional autumn and winter migrant.

Common Scoter. Autumn and winter migrant.

Redcrested Whistling Duck. Accidental.

Pochard. Autumn and winter migrant.

Ferruginous Duck. Occasional autumn and winter migrant.

Scaup Duck. Autumn and winter migrant.

Tufted Duck. Autumn and winter migrant.

Longtailed Duck. Autumn and winter migrant.

Harlequin Duck. Accidental.

Goldeneye. Autumn and winter migrant.

Buffelheaded Duck. Accidental.

Smew. Autumn and winter migrant.

Hooded Merganser. Accidental.

Redbreasted Merganser. Autumn and winter migrant.

Goosander. Autumn and winter migrant.

Great Crested Grebe. Resident, receiving migratory additions in autumn and winter?

Rednecked Grebe. Spring and autumn migrant.

Sclavonian Grebe. Spring and autumn migrant.

Eared Grebe. Spring and autumn migrant.

Little Grebe. Resident, receiving migratory additions in autumn and winter.

Great Northern Diver. Autumn and winter migrant.

Blackthroated Diver. Autumn and winter migrant.

Redthroated Diver. Autumn and winter migrant.

Common Guillemot. Spring and autumn migrant.

Ringed Guillemot. Accidental.

Little Auk. Autumn and winter migrant.

Puffin. Occasional autumn and winter migrant.

Razorbill. Spring and autumn migrant.

Cormorant. Occasional spring and autumn migrant.

Shag. Accidental.

Gannet. Occasional spring and autumn migrant.

Caspian Tern. Accidental.

Sandwich Tern. Occasional spring and autumn migrant.

Roseate Tern. Accidental.

Common Tern. Spring and autumn migrant, breeding here.

Gullbilled Tern. Accidental.

Arctic Tern. Spring and autumn migrant.

Whiskered Tern. Accidental.

Lesser Tern. Spring and autumn migrant, breeding here.

Black Tern. Spring and autumn migrant, occasionally breeding here.

Whitewinged Black Tern. Accidental.

Little Gull. Occasional spring and autumn migrant.

Blackheaded Gull. Resident, receiving migratory additions in autumn and winter.

Kittiwake Gull. Autumn and winter migrant.

Ivory Gull. Accidental.

Common Gull. Autumn and winter migrant.

Iceland Gull. Accidental.

Lesser Blackbacked Gull. Autumn and winter migrant.

Herring Gull. Autumn and winter migrant.

Great Blackbacked Gull. Autumn and winter migrant.

Glaucous Gull. Occasional autumn and winter migrant.

Common Skua. Occasional autumn and winter migrant.

Pomarine Skua. Occasional autumn and winter migrant.

Richardson's Skua. Occasional autumn and winter migrant.

Buffon's Skua. Occasional autumn and winter migrant.

Fulmar Petrel. Occasional autumn and winter migrant.

Capped Petrel. Accidental.

Manx Shearwater. Occasional autumn and winter migrant.

Great Shearwater. Accidental.

Dusky Petrel. Accidental.
Wilson's Petrel. Accidental.
Forktailed Petrel. Accidental.
Storm Petrel. Occasional autumn and winter migrant.

Henry Stevenson.*

Notes on 'Stanton Grange; or, at a Private Tutor's.' †

By John Ranson, Esq.

The Rev. J. C. Atkinson, M.A., author of 'Birds' Nests and Eggs,' &c., has just published another volume with the above title: it is, I am sorry to say, disfigured with various slang expressions, such as "lumbering thickhead," "considerable lubber," "blurted out," "auld scrap," &c. The title gives no idea of the contents of the book; indeed, the second title is calculated to mislead, for the book does not contain a single expression about the advantages or disadvantages of a private tutor. The plot of the book, such as it is, is very badly managed, and the episode of "Peter the Assassin" adds nothing to its interest. Notwithstanding all this, the facts in Natural History, which are interwoven into the narrative, are told with great power, and they alone redeem the book from being dull, for nothing on Natural History, if it comes from Mr. Atkinson's pen, can be dull.

The perusal of this little book has recalled to my memory many little facts and pleasant adventures, some of which I here present under the title of notes.

Birds laying to Death. When I was a boy there was a tradition abroad among juvenile bird-nesters that a "cuddy" (a Yorkshire name for the hedgesparrow) had laid herself to death. I once took eighteen eggs from a hedgesparrow's nest, by one at a time, always leaving a nest-egg: how many the bird would have laid I do not know, for some other nester pulled the nest out. In 1854 two young gentlemen who were under my care, robbed a magpie's nest in some firs at the bottom of my garden: they got out of the nest, the first time, five eggs, seven the second, and five the third time, when I forbad them plundering it any more, and the old birds eventually got away with six young ones. In 'Stanton Grange' (p. 7) the fact of twenty-seven eggs having been taken from the nest of a wryneck is mentioned.

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* Reprinted from White's 'History and Directory of Norfolk.'

† 'Stanton Grange; or, at a Private Tutor's.' By the Rev. J. C. Atkinson, M.A. London: Sampson Low.

Water Ouzel's Nest. I never but once found a water ouzel's nest, and that was in 1854, upon the banks of the little River Seven, which runs through Rosedale, North Yorkshire. I was fishing in a very retired part of the river when an ouzel popped out, within three yards of me. I spent considerable time in looking for the nest, and was at last rewarded by finding it: it was under a projecting slab of stone, which hung a foot over the nest, and there was scarce room to pass my hand between it and the stone: the nest contained eggs, which felt as if hard set, for I did not disturb it.

Loistering. At page 26, spearing eels by the light of a fire is mentioned. Some years ago I was very innocently drawn into an unlawful taking of trout near Harrowgate. Two men got into the Beck, each with a tin, like a bread-tin, containing three candles each; the trout were attracted by the light, and when they met the quick eyes of the two men a push was made at them with a fine steel comb fixed at the end of a pole, about three feet long. In this way, in a remarkably short time, above three hundred fine trout were captured. One of the keepers was present, and got his share and a few over.

Rats. In spring, when the farm-yards are generally cleared, the rats migrate to the fields, and making their holes in banks, breed there. I can bear witness to the destruction they cause in a field. One of my neighbours had a bean-field that was bounded by a brook, the banks of which they soon colonized, and as soon as the beans were set they commenced plundering them; they stripped the stems of the pods, extracted the beans and left the pods, and in this way bushels were destroyed.

Bite of the Adder. In my early days I was acquainted with a viper-catcher, who always carried a flask of Florence oil with him as a remedy: it was used to rub the wound, and was also taken internally. He used to tell me of a brother adder-killer who lost the use of an arm from the bite of one.

Red Field Mouse. During the autumn of 1861 I planted a pint of Mazagan beans, on a sheltered border, for an early crop. Before they appeared above ground something removed them all: my gardener blamed the blackbirds. Some time after I was removing a pit of wurzel, when out jumped a red field mouse, who fell a victim under the spade; in a minute after out jumped another, which escaped. When the whole of the earth and straw were removed from off the wurzel, there lay my beans piled up in a nice heap, close by a compact nesting-place made of wicks. The distance of the store from the place where they were planted was forty-nine yards. (See page 113.)

Hedgehogs and Arsenic. I was never partial to trying experiments on animals, but I have frequently known arsenic to be given to hedgehogs, without any serious results. (See page 221.)

Robin. In 1863 a robin built a nest among currant-bushes: when the first brood flew, the old birds cleaned out and repaired the nest, and reared another brood in it. (See page 225).

Mobbing an Owl. If an owl chance to stray away in the day-time, he is sure to be the centre of attraction to all the little birds about, who buffet him well, peck at him, and give him what my countymen call "a good calling." I have twice been witness of an owl-mobbing. French sportsmen (?) often get a tame or stuffed owl, which they put up in some conspicuous place, as a lure for the small birds, who are thus drawn within gun-reach of the hidden sportsmen. (See page 227.)

Carrion Crow. This bird is becoming very scarce in some localities. The farmers' wives on the Yorkshire Wolds and Moors are well acquainted with the fact of the carrion crow being a wader for ducks' eggs. The rook will also destroy the eggs of pheasants and partridges.

Eggs of the Tree Sparrow. I have never been able to see any great variety, either in the shape or colour, of the tree sparrow's eggs; but those of the house sparrow are subject to great variety, both in shape and colour. The tree sparrow is quite common here (Linton-on-Ouse), and should any readers of the 'Zoologist' want specimens I will send them some for the postage.

JOHN RANSON.

York, March, 1864.

Correction of an Error.—There is an important error in the bottom line of page 8964 of the 'Zoologist,' which I will thank you to correct. We are all of us liable to mistakes, and I may have made such a stupid blunder as to write "Falco islandicus" for "Falco candicans." The latter name stands, however, in the rough copy of my note (now before me), and so it should do in the place I have quoted from the 'Zoologist.' If I was the culprit, I can only say I am very sorry for it.—*Alfred Newton; Magdalene College, Cambridge, March* 5, 1864.

Rare Birds near York.—The following rare birds have occurred near here and have been sent to me for preservation:—Three bitterns: one shot at Wassent, near Borsdey; another at Londesborough, near Market Weighton; and a third at or near Church Lintern. A goshawk, shot at Oswald Birth. Two goosanders: one at Sutton-on-Derwent; the other at Newby Park, or near there; both fine old males. A female specimen of Barrow's goldeneye, shot at the mouth of the Derwent: I am not aware that this bird has before been noticed as being killed in England: I found them very plentiful in Ireland, about Newtown, when there, in 1844, with Mr. H. Melville.—*David Graham; Market Street, York, February* 13, 1864. [I feel very doubtful as to the names, but have done my best for them.—*E. N.*]

The Common Kite.—It may be interesting to the readers of the 'Zoologist' to know that the common kite (*Milvus regalis*) has not become quite extinct. On the 20th of February I saw a splendid skin of this species, sent to a taxidermist to be preserved, which was shot in Wiltshire, near Longleat. It is more than twenty years since I have seen a living bird, and only two skins during that period: they have become exceedingly rare in England. In Morris's 'History of British Birds,' I find one was seen in Hornsey Wood, in 1833, and another, in 1844, near Barnsley. When I was a boy, living in Hampshire, near Romsey, a pair of birds had a nest in a very high oak tree, standing in a wood, not far from our dwelling. This nest was occupied two years in succession, after which I saw no more of the birds. There is reason to fear that the keepers destroyed both old and young. Many of our British birds are becoming very rare, and even our summer visitants do not appear in such great numbers as they did some thirty years ago. Can any reader of the 'Zoologist' give a reason for their diminished numbers?—*J. J. Fox; Devizes, March* 1, 1864.

Osprey, Kite and Little Bustard in Devonshire.—A fine female specimen of the osprey was shot at Slapton Ley, where it had been seen fishing for roach and perch for several days previously. I have also received a male specimen of the kite, which was shot at in the cliffs adjoining the sea, and was taken wounded the following morning. Since this a female specimen of the little bustard has been sent me by Lieut. Pearce, who shot it about a fortnight since on the high open lands adjoining the sea-coast adjacent to the Start Lighthouse.—*Henry Nicholls, jun.; Kingsbridge, March* 21, 1864.

The Osprey in North Wales.—A fine osprey was shot last week in the adjoining parish of Llandrillo, by one of the gamekeepers of Croggen, the seat of the Earl of Dudley; it was of large size, and had been seen haunting the neighbouring Berwyn Mountains for some few weeks past, and occasionally visiting the outlying farms all around here; and about the time of the severe snow-storm which we had in the early part of this month, it was seen on the lands of Ty Cerrig, closely adjoining the Church of Llandderfel.—*William Pamplin; North Wales Central Botanic Gardens, Llandderfel, Merionethshire, March* 26, 1864.

Anecdotes of Hawks.—In the 'Zoologist' (Zool. 8875) is recorded the singular capture of a hawk in pursuit of a small bird. A similar instance came under my notice a short time ago: whilst my uncle was fishing in the River Avon at Stratford-sub-Castle, in Wiltshire, early in November, he observed a hawk pursuing a bird; in a few moments, either from having been struck by the hawk or from fear, the bird, which was a thrush, fell within a few feet of the spot where he was standing: the hawk, unwilling to lose his victim, came headlong after it, and the person who was with my uncle struck it with his fishing-rod, and in this manner disabled it sufficiently to make an easy capture of it: on examination the hawk proved to be a male kestrel, and is now in my possession. Another instance of the boldness of this species occurred in December last: whilst my brother, Dr. H. P. Blackmore, was driving along the turnpike-road near Wilton, about three miles to the west of Salisbury, he noticed a sparrow busily engaged in the road looking for food; his attention was soon after attracted to a hawk, which he saw flying towards the road: with that instinct innate to its species, the hawk quickly descried its victim, and with the swiftness of lightning swept down on the unfortunate sparrow, and bore it off in triumph, almost within reach of my brother's driving-whip: this incident happened in the after part of the day, just as the light was beginning to wane, but my brother quite satisfied himself that the hawk was a kestrel, and from its size he thought it must have been a female.—*Henry Blackmore; Salisbury, March*, 1864.

On the Redwing singing in England.—With reference to the observation appended to my note on the redwing singing in England (Zool. 8946), I beg again most positively to assert that on many occasions, and under the circumstances already recorded, which must have rendered any mistake impossible, I have heard the redwing in full song in Oxfordshire. After more than twenty years' experience as an ornithologist, it can scarcely be thought necessary for me to ask the opinion of any person as to the difference between a redwing and a song thrush. Any one conversant with the habits of these birds will know that they do not usually associate together, and least of all are they likely to do so at the time when the redwings are assembling for their vernal migration. Moreover, the food of the two species is essentially different; that of the redwing consisting of berries and hedge-fruit, while the song thrush subsists chiefly on snails, worms and other small animals. Although I cannot take upon myself to say that either species restricts itself exclusively to its own proper food, yet this difference must act, in a great measure, as a bar to their association.—*A. Matthews; Gumley, Market Harborough, March* 19, 1864.

Redwing singing in England.—The Rev. A. Matthews, in speaking of the song of the redwing, says, in the 'Zoologist' (Zool. 8946), that it was very little inferior to that of the song thrush, and adduced what appeared to him unmistakeable evidence of being so, from having secreted himself in a wood and watched them; nay, more, on one occasion shot one in the act. *Query:* may not this identical bird have been a specimen of our native song thrush, and may not others of this species have congregated with the redwings, and so have been mistaken by Mr. Matthews? The redwings do, however, sing or chatter not very unlike starlings, which assemble in large flocks in the autumn, and keep up a kind of jargon (to me very agreeable) just before going to roost. I have for fifty years observed the character and habits of the redwing, and could never discover any song approaching the song of the thrush, either in quality or quantity; and Bechstein says, "The song of the male bird is as inharmonious as that of the fieldfare. These birds," he continues, "make a great noise when they are collected in large flights upon the alders in March and April; but their warbling hardly deserves the name of song." This, I confess, is my experience, and I do not believe I am mistaken.—*J. J. Fox; Devizes, March* 7, 1864.

[This communication very closely corresponds with the passage in my own history of the redwing, which first originated the discussion. I am quite willing to admit that negative evidence cannot be fairly weighed against positive evidence like that of Mr. Matthews; but it is a little remarkable that Mr. Doubleday (whose very decided opinion I have not printed), Mr. Yarrell, Mr. Bond, Col. Newman, Mr. Fox, Mr. Bechstein (to say nothing of myself), all of whom have made this a special object of inquiry, should have never detected a redwing in the act of singing: it certainly tends to show that the singing is very exceptional and not the normal habit of the bird, as in the case of the song thrush.—*Edward Newman.*]

Black Redstart at Eastbourne.—A fine specimen of the black redstart (*Sylvia tithys*) was caught here by a bird-catcher on the 9th of November, 1863; a splendid adult male was also procured at Birling Gap, on the 16th of December: both birds I examined in the flesh.—*John Dutton; Eastbourne, March* 19, 1864.

Wheatears in March.—It would appear that some wheatears do remain with us here in North Wales through the winter months, for I noticed a pair of them in the neighbourhood of Bala about the middle of this present March.—*William Pamplin.*

Wheatear near Eastbourne in March.—A fine specimen of the wheatear was shot by a friend of mine, while we were out rabbit-shooting, on Wednesday last, the 16th of March. Is not this unusually early?—*John Dutton; Eastbourne, March* 19, 1864.

The Query respecting the Robin.—Probably a few birds of most of the native species may migrate, but the habits of the robin are very easily discovered. Mr. Blake-Knox (Zool. 8947) is of my opinion entirely as to the libel on the robins killing their parent birds. In England the main body of these birds forsake their winter haunts, and go further into the secluded parts of the country, and probably the males may keep closer together in winter than the females, although they never appear in flocks, like the chaffinches. But there is one great difference between the English and the Irish robin, as Mr. Blake-Knox avers, "Neither does the robin, from choice, seek man's habitation, either in winter or summer." This is quite contrary to the habits of our English bird, as I have often, in severe weather, admitted robins into my house, from their apparent voluntary wish to enter. Robins will also enter churches in England in winter, and stay a month or six weeks quite contented, provided they have water given them. It must be remembered that the winters in Ireland are much milder than in England. The robin is greatly venerated, even by boys, in England. Mr. Reeks's observation of the scarcity of the robin does not hold good here: the separation of the sexes I have not noticed at all.—*H. W. Newman; Hillside, Cheltenham.*

Notes on the Robin.—Touching the habits of the robin, I quite agree with Mr. Ranson (Zool. 8843) that it is a mistake, notwithstanding the great weight of Macgillivray, to imagine that it retires from the vicinity of man for the purpose of nidification. Last year I found five or six nests, none of which was above one hundred and fifty yards from dwelling-houses: three of these were on the open ground among grass. In my neighbourhood the robin is abundant; I have seen five together this winter. I do not coincide with Capt. Hadfield (Zool. 8878) when he insinuates that the supposed comparative scarcity of the species might be the consequence of the want of "green lanes, mossy banks, hedge-rows and ivy-grown walls wherein to build their nests." In the East Riding of Yorkshire, and in a great part of the West Riding, green lanes and luxuriant hedge-rows are distinctive features that we are proud of; and in the North-West I can testify that walls, crags and trees, thickly clad with ivy, are not uncommon: walls here, it is true, divide the fields instead of green fences, but they cannot be considered unfavourable to a bird that is partially a wall-builder. I suppose our county is considered "the North" in the Isle of Wight. Again, I cannot concur with the gallant writer when he assumes that three pairs would rear thirty-six young ones in a season. My own opinion is that the robin, bearing in mind the many dangers the eggs and young, in common with those of most other birds, are exposed to, will not on an average rear more than four at a brood.—*G. Robert Lofthouse; Wakefield, February* 20, 1864.

Migration of the Goldencrested Wren.—That the goldencrested wren arrives on this coast about the beginning of October, in large numbers, as stated by Mr. Norman (Zool. 8950), I have no doubt. Living on the east coast of Lincolnshire, nearly opposite Spurn Point, I have for several years closely watched the arrival and departure from this neighbourhood of our migratory birds. I find, on referring to my note-book, that on the 12th of October, 1863, I observed large numbers of the golden-crested wren on the few scattered hedge-rows and bushes in the open marsh country near the Humber; many on the reeds in the drains; and at a lonely farmstead, close to the Humber, quantities of these active little fellows were busily searching up and down on the fold-yard fences, in the old sheds and on the stacks. In all these localities I have never seen a single specimen at any other time during the year. A day or two afterwards they had all disappeared.—*John Cordeaux; Great Coates, Ulceby, Lincolnshire, April* 4, 1864.

Tree Sparrow near Eastbourne.—Four specimens of this moorland sparrow were brought to me on the 8th of January last, shot near here: they are not uncommon during the winter, and congregate in small flocks.—*John Dutton.*

Further Capture of Hawfinches near Beverley.—Since my last communication (Zool. 8884) relative to the occurrence and dissection of the hawfinch (*Fringilla coccothraustes*), I have had the opportunity of examining five more specimens of this singular bird. Two were shot by Mr. Eaton, of Beverley, in the "Pits" on Westwood, a common adjoining the town; one on Friday, December 11, 1863, and the other on the following Monday. These "Pits" are of ancient date, and are now thickly studded over with large hawthorn bushes, mixed up with the sloe and other brushwood. The birds were taken to Mr. R. Richardson, of Beverley, for preservation, at whose house I saw and dissected both specimens. The first proved to be a young male of the year, and the second an old male, in splendid plumage. The contents of the gizzard in both specimens I found to be precisely the same, consisting of the kernels of the sloe or bullace, mixed up with small fragments of the fruit-stone: the organ in each was quite full of this food, which was in various stages of trituration. On the 8th instant three other specimens of the hawfinch were brought to Mr. Richardson for preservation: they had been shot by Mr. Smelt, of Beverley, in the same Pits whence the other specimens were obtained. I dissected all three specimens: The first was a mature male; the gizzard was full of the kernels of the sloe, more or less broken and mixed up with fragments of the fruit-stone: the second was a young female, and the third a young male, whose gizzards contained an exactly similar mass of food to that found in the gizzard of the other bird. Thus far, in every specimen of the hawfinch I have dissected, the food has proved to be the kernel of the sloe or bullace, and this alone. In no instance had the bird swallowed the outer flesh of the fruit; and in every case the only triturating aids taken with the food were small fragments of the fruit-stone.—*W. W. Boulton; Beverley, January* 13, 1864.

Contents of Crop and Gizzard of Hawfinch.—I feel much obliged to Mr. Tyrer (Zool. 8951) for communicating the results of his dissection of a hawfinch. It is only by a careful series of dissections and observations, and a comparison of notes amongst students of Nature in various localities, that the certainty and uniformity of any habit, &c., amongst the lower animals can be correctly ascertained. I trust Mr. Tyrer will excuse my offering one or two suggestions that have occurred to me since reading his communication. First, then, Mr. Tyrer remarks that on dissection his bird's crop "proved to be empty, but his gizzard was quite full of the kernels of plums or damsons (not sloes)," &c. The hawfinch in question is stated to have been shot "at the close of last month," and, as Mr. Tyrer's communication is dated "January 13, 1864," it must have occurred at the end of December, 1863; at which period how or where could the bird have found a supply of plums or damsons? In consequence of their value these fruits are usually gathered before they are fully ripe, so that comparatively few are lost by dropping from the trees, and these few would, in the intervening lapse of time, have become so trodden into the soil, or covered with compost of various kinds, that the stones would be hard to find. Now the wild plum, bullace, or "sloe," as we here term it, is very late in ripening, and when fully ripe and fallen is less liable to be lost than the garden-plum, besides which the fruit-stone will often be found adhering to the stem long after the fleshy portion has been removed. Moreover, the hawfinch is a wild, shy bird, and frequents woods, plantations and coppices, rather than gardens, and consequently meets with the wild fruit more naturally and readily than with the cultivated. May not the kernels found in the gizzard of Mr. Tyrer's specimen be, after all, those of the bullace or sloe? Mr. Tyrer goes on to say that, in addition to these kernels, he found "a quantity of flint-grit; not a single piece of the broken fruit-stone." Did Mr. Tyrer submit this apparently flint-grit to the powers of a lens or magnifying-glass? Trusting to my naked eye, I once thought that the kernels in the gizzard of a hawfinch I dissected were mixed up with a quantity of flint-grit; but, on carefully examining these semi-transparent particles with a magnifying-glass, they proved to be, without exception, minutely broken portions of the fruit-stone. I cannot help thinking that if Mr. Tyrer thus tests the apparently flinty grit found in the gizzard of his hawfinch, he will be induced to reconsider his first decision as to its nature. I do not wish it to be supposed for one moment that I consider it unlikely or even unnatural that a hawfinch should have swallowed grit with its food. The hawfinch is a bird with a true gizzard, and therefore must swallow foreign substances to aid the organ in crushing its contents. These aids play as important a part in the digestive process of birds as the teeth do in that of animals, and are just as necessary to complete and perfect assimilation. Nature most wonderfully accommodates herself to circumstances, and although I could never find that caged hawfinches swallowed the grit offered them, I have no doubt that were they compelled to live on the buds of trees or softer food than we have found them selecting in a state of nature, they would eagerly substitute grit for the broken fruit-stone. I still think, however, it will be found, as a rule, that birds living on either the flesh or kernel of stone-fruit will prefer the stone of the fruit on which they have fed, either whole or broken, according to the part selected for food, rather than any other hard substance, as an aid to the digestive function. In reply to Mr. Tyrer's inquiry as to the nature of the soil about Beverley, it is rich loam and clay on chalk and gravel.—*W. W. Boulton; Beverley, March* 10, 1864.

Hawfinches near Eastbourne.—Several hawfinches have been killed here within a few days. One in my possession met his death by striking against the lantern of the lighthouse called "Bell Tont," near Beachy Head, in December last.—*John Dutton; Eastbourne, March* 20, 1864.

Note on the Yellowhammer's Nest.—On the 8th of May, 1862, I found the nest of a yellowhammer (*Emberiza citrinella*) at Kingsbury, in a tall, thin hedge, and nearly six feet from the ground; it contained two eggs. In this hedge also, a few yards off, I found, on the same day, another nest placed even higher up, but, as it contained no eggs, the species is hardly certain, though the nest apparently differed in no way from the other.—*Charles B. Wharton; Willesden Green.*

Food of the Rook.—One word in answer to Col. Newman and Capt. C. J. Cox, who write in the 'Zoologist' (Zool. 8951, 8952) on the food of rooks. I did not mean to make any attack upon, or to give a bad name to, the rooks, of which we have a great number in this neighbourhood; and I am quite sure, from experience, that they do much more good than harm, though, on account of their omnivorous propensities, they undoubtedly do mischief at times, and get blamed for more than they really do. That it was a rook, as mentioned by me (Zool. 8885), that was feeding on the young rabbit, I am perfectly certain, as I got quite close, within about half a gun-shot, and could distinctly see the rough white skin round the base of his beak: had I entertained any doubt on the subject, I could easily have shot him, as I had a gun in my hand at the time. Were further evidence necessary, the fact of his joining a flock of rooks in the next field, some of whom till frightened by me were in the same field, and close by the rabbit-eater, I think conclusive, as I do not believe that crows ever associate so intimately with rooks. I certainly considered both the rabbit and the sand-eel very unusual food for rooks, and made a note of what I had seen when I returned home, from which I copied.—*Cecil Smith; Lydiard House, near Taunton, March* 14, 1864.

[I never doubted Mr. Smith's bird was a rook: I always conclude that no one would venture an opinion on such a subject who did not know a rook from a crow.—*E. Newman.*]

Food of the Rook.—Col. Newman mentions, in the 'Zoologist' (Zool. 8952), the fact of rooks eating eggs as an extraordinary circumstance, only to be accounted for by the great scarcity of water. I have several times seen a number of rooks plundering a duck's nest by the side of a pond, and short work they made of the eggs: my attention was drawn by a number of rooks (upwards of twenty) cawing and fighting for the eggs, which were laid amongst rushes close to the water's edge. I suppose the nests were discovered by some of the birds going to the pond to drink. Some years ago I saw three rooks (not carrion crows) attack a missel thrush's nest, and, in spite of the indignant clamour of the owners, carry off the eggs to a neighbouring rookery. That rooks will eat carrion freely I have seen many proofs, and have used it as a bait when wishing to shoot some of them, and once killed six at one shot, feeding on a piece of dead calf.—*Joseph H. Ellis; Leicester, March* 19, 1864.

Abundance of the Kingfisher in Lincolnshire.—The kingfisher has been unusually plentiful in this neighbourhood this winter, more particularly, however, in the months of October and November. When out shooting, I have repeatedly seen these beautiful birds, and in many drains and places where I have never in previous seasons noticed them. A few pairs remain here during the summer, but few compared with the number that have visited us this winter.—*John Cordeaux; Great Coates, Ulceby, Lincolnshire, April* 4, 1864.

Arrival of the Wryneck.—I had a wryneck sent me from Sidlesham on the 19th instant: this is about a fortnight before the usual time of its appearance here.—*W. Jeffrey, jun.; Ratham, Chichester, March* 22, 1864.

Arrival of Cuckoos, Nightingales and Swallows.—All I can say in reference to the very numerous records I have received of such events prior to the middle of March, is that I cannot print them unless their authenticity is vouched for by some ornithologist with whom I am personally acquainted. Without denying the possibility of such occurrences, I must decline the responsibility of publishing them.—*Edward Newman.*

The Willow Grouse and Red Grouse.—I have just been reading Mr. Reeks's communication (Zool. 8955), and shall here offer a few remarks in reply to that gentleman. I certainly have not seen Mr. Wheelwright's letters in the 'Field,' for I do not see that paper, but have recently read his very interesting work on Lapland. The conclusions, however, of Mr. Wheelwright I cannot by any means agree to. It is unnecessary here to repeat the reasons I before gave, in the 'Zoologist' (Zool. 8868), when discussing the subject of identity of the two birds; but there are points of distinction in their habits, quoted by Mr. Reeks, which require a few remarks. Mr. Reeks asks whether any one has seen the red grouse perch on a tree: I never did, nor was I aware that the willow grouse perched; indeed I never saw the bird in the neighbourhood of trees. If the bird really does perch in trees, the fact goes strongly against my views. The nesting of the willow grouse in the forest I know nothing of: as I have stated, I never saw the bird in anything that could be called a forest, but only on the elevated fjelds, with occasional thickets of willow, birch and juniper, which correspond with our upland moors. Mr. Reeks then asks "whether any one has ever known the red grouse frequent, even accidentally, small birch, willow or fir forests, lying remote from moors?" In reply to this, I have repeatedly, on the Yorkshire Moors, both sprung and shot this bird from low thickets of birch, willow and bracken, lying on the low sheltered parts of the moor, where such vegetation frequently occurs, especially where a stream runs. I may here mention, with regard to the partiality of the willow grouse to forests, if such really be a fact, that on our moors, the ling and heather is much more frequent, taller and more robust, than on the Norwegian fjelds, and that, for lack of this necessary cover, the willow grouse may select coppices and forests of birch and willow. I have spent days together in forests of fir, birch and pine, but I certainly never came across willow grouse in such situations. Mr. Wheelwright certainly errs in saying that the willow grouse is never seen on the open moors and fjelds, for I have seen them in such situations on the Doure, quite as frequently as amongst the thickets of willow and juniper. Then, again, the red grouse may be partial to dry situations, but it by no means avoids wet and swampy places, a fact that most shooters are aware of; indeed it is a notorious fact, that during the heat of the day such places are far more likely to yield a bag than the drier parts of the moor. Touching the matter of the eggs, as a means of clearing up this dispute, I must acknowledge I am but little versed in the subject, and merely throw out the hint for those learned in this department, for them to make use of or not, and have now, I think, said all I know of the matter, and must leave the question to those far more competent than myself for settlement.—*George Norman; Hull, March* 1, 1864.

The Red Grouse and Willow Grouse.—In the editorial note (Zool. 8955) appended to the communication of Mr. Reeks upon the grouse question, it seems to me that scarcely sufficient value is accorded to the observations of Mr. Wheelwright; for, although there may be nothing in them that is likely to settle the question, yet the comparative difference of the habits of two closely allied species may be of some value; certainly, according to my experience, of more value than a comparison of their eggs, so much contended for by the Rev. A. C. Smith,—that is, if we are to judge by the eggs of other closely allied species. I may mention a case that came under my own observation: about twenty-five years since, while exploring the upper marshes of the Solway, my attention was attracted to a large colony of terns hovering over a particular portion of the marsh, at some distance; on reaching the place, I found it to be their breeding-ground, and upon examination I found a great many nests, or, I should more properly say, a great many deposits of eggs, for they make no nest, merely selecting a depression in the turf: upon examining these eggs, I found them to differ, both as to ground-colour, disposition of markings, and even in shape, in the same nest: while making these observations, I heard a difference in the voices of the host of birds overhead; by paying a little more attention, I found that two or three outsiders had a short crisp note; one of these I brought down; it was a roseate tern. I next select others from the main body of the host, whose notes were somewhat more prolonged, but still harsh and clear; on shooting two or three of these I found them to be arctic terns: the more prolonged and nasal cry of the majority of the birds, I found when shot to proceed from the common terns, for I shot two or three of each species here enumerated to satisfy myself, and, to judge by the excitement displayed by all at my presence, I am persuaded they—that is, each species—had deposits of eggs laying round me, yet I doubt if the most skilful oologist could have successfully separated the eggs of any particular species from the others. Many years afterwards I found a small colony of arctic terns upon a bare rock in the Sound of Harris, in the outer Hebrides; the eggs presented the same variety as those above mentioned. These variations may not exist in the eggs of those grouse, but, should they closely resemble each other, it could not be admitted as a positive test of the identity of species. The best way of testing the matter would be to have the Norway grouse introduced into Scotland: a few generations (of grouse I mean) would settle the question.—*James Cooper; Museum, Warrington, March*, 1864.

Bittern near Beverley.—On the 19th of February last a very fine old male specimen of the bittern was shot on Hornsea Mere, a lake of considerable extent, about twelve miles from Beverley, and between one and two miles from the sea. Another, probably the female, had been shot on the same water a short time previously. The male bird is in my collection; I had it in the flesh and dissected it. The stomach contained two young pike, one seven and the other eight inches long: both fish had been swallowed (as I believe is always the case in predacious birds that swallow their prey whole) with the head directed downwards, and apparently about the same time, for both fish were nearly equally acted upon by the digestive solvents of the stomach: the skulls of these fish were both perfectly denuded of flesh and integument, and the bones themselves separated one from another: the skin and flesh of the shoulder was quite pulpy; that of the back, sides and belly so far softened as to slip off easily on being touched with the finger; but that of the caudal third, and the tail itself, was scarcely acted on at all, and retained the consistency and appearance of the fish when fresh. The intestine measured 8 feet 4 inches in length from pylorus to anus. The bird was altogether larger than the female specimen I recorded in the 'Zoologist' (Zool. 8961), and which was shot on the 4th of January, on the River Hull. I have preserved the lower jaw of one of the pike taken from the bird's stomach, also the stomach itself and the intestine, in case any of the readers of the 'Zoologist' might like to examine them further.—*W. W. Boulton; Beverley, March* 9, 1864.

Bittern at Eastbourne.—Three specimens of the bittern have been shot in our marshes during December and January; one, on the 15th of January, a great beauty, which I saw and examined.—*John Dutton; Eastbourne, March* 19, 1864.

Ruddy Shieldrake, Spotted Sandpiper and Bittern near Epworth.—In the last week of January a fine specimen of the ruddy shieldrake was taken in Capt. Healey's decoy, near Ashby; and single specimens of the spotted sandpiper and bittern have been shot here within the last few days.—*Samuel Hudson; February* 18, 1864.

Pintail, Longtailed and Scaup Duck at Eastbourne.—On the 27th of February a friend of mine shot a beautiful male and female of the pintail on the Crumble Pond:

the female was alive when I saw it. A beautiful female of the longtailed duck was killed with a stone by a farmer, while it was swimming on a small pond near Polegate, in January last: what could have brought this rare visitant to the said pond I cannot imagine. Scaup ducks have been unusually plentiful.—*John Dutton.*

Variety of the Common Wild Duck.—I have just examined, in the flesh, a variety of the common wild duck (*Anas boschas*), a female, killed in the Humber, near Ferril Sluice. The whole of the under parts are pale buff, on the neck and upper part of the breast slightly streaked with pale brown; sides of the head pale buff; upper part of the head and neck pale brown, streaked down the centre of each feather with darker brown; back, scapularies and upper tail-coverts pale slate-colour, each feather broadly marked down the centre and margined with pale chestnut; tail light sandy colour, the middle feathers slightly darker down the centre. The wings have the primaries pale gray, the outer webs darker; secondaries pale slate-colour on the inner webs; the outer webs dark gray; tips white. Tertiaries uniform pale slate-colour; greater wing-coverts pale slate-colour, barred across near the tips with white; tips pale slate-colour; upper wing-coverts pale slate-colour, slightly tinged with brown. The entire plumage of this duck is remarkable for its subdued pale tint; there is a complete absence of the speculum, or beauty-spot, on the wings. The bird was in fine condition, and very fat.—*John Cordeaux; Great Coates, Ulceby, Lincolnshire, March* 26, 1864.

Ferruginous Duck in Radnorshire.—I send you a short account of the ferruginous duck (*Fuligula nyroca* of Selby's 'British Ornithology' and Jenyns' 'British Vertebrata'). Specimens of this bird appear to be rare even in the eastern counties of England, and I have never seen or heard of another specimen having been found so far to the westward as this county (Radnorshire). This specimen, which is either an adult female or the young of the first year, appeared first on a pond of mine in the winter of 1859, and remained on the pond till February, or, I think, March of the following year 1860. It did not appear to be wild, and I was able to examine it with a pocket telescope on the water: now and then, if approached very near, it took flight, but only to settle again at a short distance on the pond, which is a small one. The white bar on the wing was very distinctly visible in flight. I would not have it molested, as I do not allow any birds to be destroyed. I did not see it on the pond later than, I think, March, 1860.—*Harford J. Jones Brydges; Boultibrooke, February* 22, 1864.

Tufted Duck near Salisbury.—I purchased, in the flesh, a short time ago, a good male specimen of the tufted duck (*Anas fuligula*); it was shot on the River Avon, a few miles to the north of this city, on the 4th of February, 1864. About the same date last year, I obtained a female, which was shot on the same river, near Breamore, about nine miles to the south-east of Salisbury. These are the only specimens of this species that have come under my notice in this neighbourhood.—*Henry Blackmore; Salisbury.*

Smew near Eastbourne.—A beautiful adult male specimen of the smew (*Mergus albellus*) was shot, about a month since, at Cuckmere Haven. It is in my collection. —*John Dutton; Eastbourne, March* 20, 1864.

Dusky or Sclavonian Grebe near Selby, Yorkshire.—On the 20th of February a female specimen of the dusky or Sclavonian grebe (*Podiceps cornutus*) was killed on the River Ouse, near Selby, by a bargeman. It was sent to me in the flesh, and I dissected it. The gizzard contained vegetable matters far advanced in maceration, the remains of a few water-beetles, and a considerable mass of feathers plucked from the bird's own breast.—*W. W. Boulton; Beverley, March* 1, 1864.

Sclavonian or Dusky Grebe near Salisbury.—An excellent female specimen of the Sclavonian grebe (*Podiceps cornutus*) was brought to me, in the flesh, last month; it was shot in this immediate neighbourhood on the 19th of January, 1864. I never recollect seeing a more beautiful vermilion-red colour than the irides were when first it came into my possession: the bird was in very good condition, and well shot for preserving. I cannot learn that this species has been previously met with in this neighbourhood.—*Henry Blackmore; Salisbury.*

Eared Grebe on the Humber, near Hull.—On the 20th of February a female specimen of the eared grebe (*Podiceps auritus*) was sent to Mr. R. Richardson, of Beverley, for preservation; it was in the flesh, and I dissected it, proving it to be an immature female. It had been shot on the Humber, near to Hull, and was offered for sale at a fish and game shop in Hull.—*W. W. Boulton; Beverley, March*, 1864.

Gargany Teal at Flamborough.—The other day I received a very good male specimen of this charming little duck from Mr. Bailey, of Flamborough, on the east coast of Yorkshire: it was in the flesh, and had been shot, on the 19th of March, by Mr. Robert Barkley, of Flamborough, near to that place. I have never before seen one of these ducks in the flesh, although I have no less than three other specimens, one of which was shot on our own River Hull, some years ago. In the Lincolnshire decoys this duck is not unfrequently taken, and a stray specimen occasionally finds its way to the Hull Market with other ducks; nevertheless, I have not before seen a specimen in the flesh that had been shot in the East Riding.—*Id.*

[These beautiful little ducks have been unusually abundant in Leadenhall Market, the price varying according to the apparent eagerness of the buyer: two shillings each for very perfect specimens is the highest price I have heard asked. There is no longer any possibility of ascertaining the country of birds offered for sale in our markets; formerly the locality could be traced without much difficulty.—*Edward Newman.*]

Redthroated Diver near Beverley.—On the 3rd of March a particularly fine immature specimen of the redthroated diver (*Colymbus septentrionalis*) was shot on the River Hull, by George Verity, of Beverley, near to Wilfholme, about seven miles above Beverley. The bird was brought to me in the flesh, and on dissection proved to be a female.—*W. W. Boulton; Beverley, April* 2, 1864.

Bernicle Goose at Bempton, near Flamborough.—On the 4th of March a very beautiful old male of the bernicle goose (*Anser leucopsis*) was shot at Bempton, near Flamborough. It was sent to me, in the flesh, together with the above details of its capture. I dissected the bird, and found an immensely developed gizzard, and a very lengthened intestine. Both gizzard and bowel were full of vegetable matters; the gizzard also contained fine sand mingled with the vegetable food. The length of the intestine from pylorus to anus was nine feet.—*Id.*

Egyptian Goose and Great Gray Shrike in Somersetshire.—I have to record the appearance of two rare birds in this county, namely, the Egyptian goose, two very fine specimens of which I saw, in the flesh, at Mr. Turles, bird-stuffer, at Taunton, on the 24th of March; one had been shot on the River Parret, near Bridgewater, and the other near Glastonbury, a few days before; both birds had been recently killed, and were in very fine plumage: and one example of the great gray shrike, shot near Wiveliscombe on the 31st of March.—*Cecil Smith; Lydiard House, April* 10, 1864.

Note on the occurrence of the Egyptian Goose near Glastonbury.—On the 23rd of March I was shown a specimen of the Egyptian goose (*Anser ægyptiacus*), which had been shot the day before on Turf Moor, near Glastonbury, Somersetshire. It had been seen flying in the neighbourhood for several days. The elegant form of the bird, the minute and delicate pencilling of the plumage, the colours of the wings, and, more especially, the chesnut patch on the breast, readily determined the species. In Yarrell's 'British Birds' it is stated of this bird that "four were shot on the Severn, near Bridgewater, in February, 1840." This appears to have been near the mouth of the Bridgewater river, the Parret, which is but ten or twelve miles from the place where the present bird was shot.—*Thomas Clark; Halesleigh, April* 12, 1864.

Wild-fowl in the London Waters. By Henry Hussey, Esq.

Four years ago (Zool. 6922) I sent some notes to the 'Zoologist,' hoping to get from its correspondents some information on a subject which is a puzzle to me, *viz.* the frequent appearance of wild-fowl in the London waters. I was not successful. Mr. Crewe's letter (Zool. 7049) does not appear to me to go far in clearing up the difficulty. That a few passing wild-fowl, several years ago, occasionally pitched and remained a few days in the Regent's Park Lake, quiet and secluded as a great part of that water then was, I can well believe. Colonel Hawker, in the ninth edition of his 'Intructions to Young Sportsmen,' published in 1844 (p. 508), states that he had, in a previous winter, observed at least thirty wild fowl, wigeon, tufted ducks and dun birds, in the Regent's Park water. But that any, or at all events the great majority, of the birds I have seen, often very tame, are wild bred, I cannot believe, except on better evidence than I have been able to obtain. The male unpinioned wigeon Mr. Crewe mentions, I often noticed during two or three successive years, and have always supposed that he was the father of some of the numerous hybrid wigeons I have often seen, but only in the Regent's Park waters, and there only occasionally and at considerable intervals: the keepers of this park tell me that the hybrids only visit these waters now and then. However this wigeon was first introduced into the Regent's Park, I cannot assume, without further evidence, that he was a wild-bred bird who had voluntarily taken up his residence in London, with a duck for his wife. The eleven pochards I saw in the Serpentine in January and March, 1862 (Zool. 7939), two of the park-keepers told me, were all bred in one of the shrubberies on the Serpentine, the produce, no doubt, of the pinioned pair I had seen a few years before. They appeared to me to be mature birds, not birds of the year, and mostly males. They only stayed while the floating ice prevented the boats from plying; as soon as the water ceased to be quiet every bird disappeared. They visited the Serpentine again in the following March, when the water was also quiet. It appears therefore that these birds, although bred in the Kensington Gardens, do not make the Serpentine their usual haunt, but only visit it at rare intervals. Frequently as I walk the whole length of the Serpentine, carefully examining its waters with a glass, these pochards could not have escaped me had they been in the habit of coming here in the daytime.

I have never seen any party of diving ducks on the Serpentine from that time (early in 1862) until the 5th of January last, on which day I saw a party of about twenty diving ducks: I counted nineteen. The water was then also quiet, partially covered with ice, which did not bear, and no boats: so dark was the day and distant the birds that I could not be quite sure as to the species, but believe they were pochards, with a few tufted ducks among them.

From the accompanying notes, it will be seen that the number of the species, as well as of the birds, which frequent the London waters has increased since 1860, although those waters have certainly not become more quiet. All the birds mentioned in the following list I have seen myself.

1860.

April.—St. James's Park Canal: two male gadwalls.

November.—St. James's Park Canal: two male gadwalls. Regent's Park: two hybrid wigeons, male and female.

December.—Regent's Park: one male and two female hybrid wigeons. St. James's Park Canal: a ferruginous duck.

1861.

January.—Round Pond, Kensington Gardens: a female pochard, quite tame. Regent's Park Lake: one male and two female hybrid wigeons, and four teal, three male and one female (these four birds were quite tame); there was skating on the lake.

February.—St. James's Park Canal: two male gadwalls and one ferruginous duck.

March.—Regent's Park Lake: two male hybrid wigeons and one female.

April.—Round Pond, Kensington Gardens: one male and one female pochard, and a female ferruginous duck. St. James's Park Canal: one male ferruginous duck, one female pochard and one male gadwall.

May.—Regent's Park Lake: one male hybrid wigeon.

October.—Round Pond: a pair of ferruginous ducks (male and female) and a female pochard.

December.—St. James's Park Canal: a pair of gadwalls (male and female), a pair of pochards (male and female) and a male tufted duck.

1862.

January.—Serpentine: eleven pochards.

March.—Serpentine: about ten or twelve pochards.

May.—Regent's Park Lake: a male hybrid wigeon and a male gadwall. St. James's Park Canal: a male gadwall.

October.—Round Pond: a pair of gadwalls (male and female), a pair of pochards (male and female), and a male tufted duck. St. James's Park Canal: three male gadwalls, one male ferruginous duck, one female pochard and one female wigeon.

November.—Round Pond: nine diving ducks, *viz.*, one male tufted duck, two pairs of pochards (male and female), two ferruginous ducks and two other ducks (pochards, I believe).

December.—Round Pond: four diving ducks (all pochards, I believe). St. James's Park Canal: a pair of wigeons (male and female).

1863.

January.—St. James's Park Canal: two male wigeons, a male and female gadwall, and a female pochard.

February.—Regent's Park Lake: a pair of hybrid wigeons.

May.—St. James's Park Canal: three gadwalls and a ferruginous duck.

October.—Serpentine: a male gadwall.

December.—Regent's Park Lake: a male hybrid wigeon. Serpentine: two male gadwalls, a male teal (quite tame), and two male wigeons and one female. Round Pond: a male gadwall.

1864.

January 5th.—Serpentine: about twenty diving ducks (pochards and tufted ducks, I believe), a male gadwall and a male teal.

January.—Serpentine: five wigeons, two male pochards, a male teal, a male gadwall and a male goldeneye. Round Pond: one male and two female wigeons, and one male gadwall. St. James's Park Canal: three male and one female wigeon, and a male gadwall.

February.—Serpentine: seven wigeons, one male goldeneye and one male teal.

March.—Round Pond: a male gadwall. Serpentine: a male gadwall.

April.—Serpentine: a male teal. Round Pond: a male pochard.

From this list, and the former one in the 'Zoologist' (Zool. 6922), it will be seen that the London waters have been visited by wild-fowl of no less than eight species, without reckoning the hybrids, namely, gadwall, wigeon, teal, shoveller, pochard, tufted duck, ferruginous duck and goldeneye. My theory that these birds were bred in the Zoological Gardens or the Regent's Park, and that they were only waiting in town until their migrating time arrived, is not, I am afraid, a sound one, and will not bear investigation. Very many, I think most, of these birds are old birds, males chiefly. They are too numerous to have escaped from the Zoological Gardens, and the facilities for breeding in the other London waters are very small indeed, unless in Her Majesty's garden and water at Buckingham Palace, the birds meet with an asylum and the quiet they require. Perhaps some of the correspondents of the 'Zoologist' may know whether or not this is so, and, if it is, be kind enough to insert such information in the 'Zoologist.' If the birds always find a place of refuge in Buckingham Palace Gardens, most of the difficulties as to their appearance in the parks vanish.

Besides the birds I have mentioned as frequenting the Serpentine, a coot, with perfect wings, haunted that water for about five weeks, in January and February. I never but once before saw a coot in the Serpentine, and that was on the 11th of February, 1863, on which day, and in the same water, I also saw a little grebe (dabchick), in its clove-brown winter plumage. On the 11th of this month I saw a little grebe in the Round Pond, Kensington Gardens; it kept well out in the middle of the pond, but, by means of a glass, I could distinguish its size, shape and action, and satisfy myself that it was not a young duck, of which indeed there was not one in the pond. It seems to me very extraordinary that a bird whose powers of flight are supposed to be very small, should make its appearance in a pond without an atom of cover in or near it, and surrounded by many miles of brick and mortar. On Christmas Day I saw a kingfisher flying over the Serpentine in Kensington Gardens. In December last four mute swans, with perfect wings, visited the Round Pond: they did not stay long, but I had the pleasure of seeing them on the wing twice before they went to the Serpentine; they stayed but a short time at the latter water, and when I saw the last of them, on the 21st of January, they were on the wing, rising in the air, as if for a long flight: they flew perfectly well, rising from the water without the preliminary flapping along the surface described by the late Mr. St. John in the case of wild swans. Where did these birds come from? and how happened it that they were so fortunate as to escape being crippled in their youth, in the usual manner?

As I am always absent from town during the summer months, I cannot say what birds visit its waters during that period.

Henry Hussey.

7, Hyde Park Square,
April 12, 1864.

What is the usual time for Frogs to cast their Spawn?—I have some years seen it as early as the middle of January, in sheltered spots: this having been a very mild early winter I was induced to watch some of their early spawning places, to see if the weather had any influence on the spawning, and on the 26th of December last I was successful in finding some deposited. I had passed the same spot on the 23rd, when there was not any spawn there: I should think, from the appearance of the spawn, it must have been cast on the 25th. This, I think, must be very unusual. I have been on the look-out for a great many years, and have never seen any before the middle of January until the above-named occurrence. All the spawn has been frozen, and I shall be anxious to see if the frost has any bad effect on it.—*Stephen Clogg; Looe, Cornwall, February* 15, 1864.

Engineering under Difficulties.—In a small glass-covered room, serving the three-fold purpose of a lounge, a green-house and a nursery for larvæ, stands a table, on which are a Camellia plant and a Hydrangea: scattered over the surface of the table are seeds of the vegetable marrow, each about half an inch long and of considerable weight. On entering the green-house one morning, I observed two of the seeds suspended some twelve or fourteen inches from the table: on examination I at once perceived (what I had frequently read of and much desired to see) that this was the work of a spider. During the previous night a web had been formed attached to the Camellia on one side and to the Hydrangea on the other: the shape of one of the plants was such that the necessary moorings for extending and steadying the lower portion of the web, apparently, could not be carried out. To obviate the difficulty, two cables had been taken down to the table, each attached to a seed, and then shortened up, raising the seeds to within four or five inches of the lower edge of the web and twelve or fourteen from the table: this proportioning of the distance would be about the best for avoiding too much swing and yet effect the purpose. The web and seeds remained undisturbed for several weeks, and the little engineer's labours were rewarded, as I saw, during that time, several fierce struggles, always ending in favour of the spider, except when a honey-bee occasionally became entangled: the former then wisely kept aloof until the bee had broken away: the following morning always found the rent in the web repaired.—*George Gascoyne; April*, 1864.

The Fossil Human Eyes.—In the Free Museum of Liverpool I have seen the eyes which were presented by Capt. Heron, of the ship "Mystery," on the 2nd of May, 1859: they are the eyes described in the communication headed "Curious preservation of Human Eyes," by Mr. Peter Inchbald, in the 'Zoologist' for 1860 (Zool. 7273).

They are the horny portion of the eye of the cuttle-fish, which are preserved in the cemetery near Arica in Peru; and were described from specimens brought from the same situation by Mr. Hennah, in my 'Specilegia Zoologica.' The crystaline lens of the human eye are of quite a different shape: they are more like the globular crystaline lens of the fish. But there can be no doubt of their being the crystaline lens of the eyes of the Loligo, if any one will take the trouble to compare them with the crystaline lens in the eyes of the recent specimens of that family. See the figures of the eyes of the cuttle-fish, after Cuvier, in Jones's 'General Outline of the Animal Kingdom,' fig. 275, at p. 590. These eyes were worn as ornaments by the Peruvians, and Mr. Stutchbury informs me that the natives of the Sandwich Islands sold them to the Russians as pearls.—*J. E. Gray; British Museum.*

Addendum to Mr. Hellins' Paper (Zool. 8985).—The date of my paper in the last number of the 'Zoologist' should have been February 20th, the only portion of it dating March 7th being the postscript to the note on Cidaria russata and C. immanata, from line 7 to line 17, page 8989. The larvæ of C. russata, mentioned in my note, are now spinning, having attained a length of 1½ inch; but within the last week I have captured some just ¾ inch in length, which will not be full fed for two or three weeks. Meanwhile the largest larva of C. immanata which I have is barely ⅓ inch long, and some of the eggs, which are evidently not dried up, remain yet unhatched.—*J. Hellins; April* 11, 1864.

Larvæ of Sphinx Ligustri and Liparis auriflua.—I can most fully corroborate the remarks of my friend Mr. Gascoyne (Zool. 8968), in contradiction of the theory broached by another of your correspondents (Zool. 8906), that the larva of Sphinx Ligustri, when young, descends to the ground during the day for the purpose of concealment. I have taken numbers of the larvæ, both in the newly-hatched and every succeeding stage, and I have had as many more from the egg. I always found them in the natural state high up on the twigs and branches (generally when small on the under side of a leaf), and in confinement I never observed them descend. With regard to your correspondent's remarks (Zool. 8969) on the hybernation of Liparis auriflua, and his astonishment thereat, I am as much astonished at his astonishment. The larva of L. auriflua *always* hatches in the autumn and hybernates, and so does L. chrysorrhœa.—*H. Harpur Crewe; The Rectory, Drayton-Beauchamp, Tring, March* 12, 1864.

The name "Puss Moth" and English Names in general.—The aspect of Dicranura vinula, in that stage of its growth referred to by Mr. Beauchamp (Zool. 8971), may certainly have given rise to its name of "puss" moth. It does not, however, appear to me to present at that time the strongest resemblance to the feline race. Strange to say, it resembles those individuals at two other periods of its existence. The young larva, up to the time of its second ecdysis, is exactly like a cat in miniature, when it is in a state of repose; and then the moth, when viewed from beneath, as when it is at rest upon the lid of a gauze-covered box, reminds one strongly of the head of a white cat. With regard to English names, the question has several times been put to me, "Is not a reformed English nomenclature possible?" I fear not. In attempting to carry out such a revision, it would be found impossible to determine, in many cases, which name really was the oldest applied to the insect. Besides, many would argue, that if we attempted to form such a vernacular nomenclature, the older name ought to be discarded, in not a few instances, in favour of one more appropriate to the species. It is singular what errors have crept in already amongst the English names: thus, I feel quite convinced that the name "Admiral," applied to two species of our Diurni, is a corruption of the name "Admirable," found in the oldest works; given, doubtless, on account of the rare beauty of these insects, *ergo admirari debet.* I hope, therefore, that the use of these uncertain names will be avoided by entomologists as far as possible: most of them must now be convinced of the utility, not to say the necessity, of a standard Latin nomenclature, capable of a world-wide use.—*John R. S. Clifford; 21, Robert Terrace, Chelsea, March* 31, 1864.

Results of Pupa-digging.—In this county neither larvæ nor pupæ were at all plentiful during the autumnal part of last year; therefore we cannot reasonably expect to find Lepidoptera otherwise than rare in this neighbourhood at the approaching season. I commenced pupa-digging in September last, and continued the pursuit upon every available day until Christmas. Having kept a journal of each day's proceedings, I find I have enjoyed upwards of fifty days' vigorous hunting, and have taken 2300 pupæ, which I consider to be a much smaller number than I have usually taken in former years, in proportion to the time so occupied. They consist of the following:—

Noctuina	2009
Geometrina	138
Smerinthus Populi	21
" Tiliæ	88
Bombycina	17
Cocoons of Sesia apiformis	31

The number of Geometrina, in proportion to the Noctuina, is certainly very small. Pupa-digging, I think, must be, to those who have a thorough relish for Entomology, a very exciting enjoyment, at least I have ever found it to be so. I think little of distance to a likely spot, having scores of times walked from six to nine miles out early in a morning, and set to work digging, and continued doing so almost as long as daylight lasted, never sitting down, or eating or drinking, until I was upon the road home again. This is perhaps more enthusiastic than wise, but my object has usually been to make the most of the time. My principle endeavours lately have been made to obtain Xylomiges conspicillaris, and I hope to be enabled ere long to announce that I have been successful.—*Abraham Edmunds; The Tything, Worcester.*

[I believe the tendency of Mr. Greene's admirable 'Insect Hunter's Companion' will be to render pupa-digging universal among Lepidopterists: the work is indispensable to the collector. To those, however, who do not possess the virtue of patience pupa-digging will often prove a wearisome pursuit.—*Edward Newman.*]

Cells of Bees: Hexahedral Forms very general in Natural Objects.—In the most interesting discussion that has taken place at the Entomological Society between Mr. Waterhouse and Mr. Smith, a very simple difference not hitherto expressed certainly exists. Mr. Waterhouse evidently believes that hexahedral forms in Nature come direct from the great Workmaster, without thought or contrivance on the part of the individual agents; Mr. Smith, on the contrary, attributes the result to the skill, reflection, contrivance, instinct,—call it by what name you will,—of the individual bee who labours in their production, though doubtless he would equally attribute this skill, or whatever it may be called, to the same Fountain-head. Now I can fully agree with the view I have assigned to Mr. Waterhouse, but not at all with that which is, I believe, held by Mr. Smith. I do not for a moment deny that an animal may reflect, and act on reflection; that it is capable of receiving instruction, and of acquiring a variety of accomplishments, if so they may be called. A monkey will learn to dance, smoke, stand on its head, fire a gun and imitate exactly a hundred other human actions, but all this is the result of laborious and long-continued teaching. The bee, on the contrary, without any teaching, without any meditation, begins to make its beautiful and symmetrical cell the hour it is born: it is as much an irresistible act, and the architect is as much an irresponsible agent, as the hen that covers her egg with a calcareous shell before extrusion, and produces it of the best possible form for the purpose for which it is intended. The egg and the cell are worthy of all admiration, but neither the brain of the hen nor that of the bee have laboured in their construction. This granted, the question of lateral pressure is of very secondary importance; it is a question that has only been imported into the controversy as accessory or supplementary, and forms no part of the simple inquiry, whether the hexahedral form of cell is due to the sagacity of the bee. Mr. Spence, in controverting the views expressed in Darwin's 'Zoonomia,' says, "The single fact, depending on the assertions of such accurate observers as Réaumur and Swammerdam, that a bee, as soon after it is disclosed from the pupa as its body is dried and its wings expanded, and before it is possible it should have received any instruction, betakes itself to the collecting of honey or the fabrication of a cell, which operation it performs as adroitly as the most hoary inhabitant of the hive," &c. Now this is a fact not open to question; Mr. Smith would admit the premises without hesitation; but if I understand him right, he would deny the truth of Mr. Spence's definition of instinct,—"those unknown faculties implanted by the Creator, by which, independent of instruction, observation or experience, and without a knowledge of the end in view, they are impelled to the performance of certain actions tending to the well-being of the individual and the preservation of the species." Such, for instance, is the construction of a cell, and such is the covering of an egg with a calcareous shell; in neither case is the act optional, it is compulsory. I purposely select extreme cases, but the practical naturalist will readily supply intermediate ones which will fuse them into a single principle: that instinct, taking it as defined by Mr. Spence, "compels animals to provide for the well being and continuance of their race." Mr. Spence, in continuation of the subject, gives a multitude of most interesting exceptions to the ordinary modes of working adopted by bees, and, after dwelling on each instance fully and fairly, he rejects all idea of any higher or other cause than compulsory instinct: he says, "No degree of reason that we can, with any share of probability attribute to bees could be competent to the performance of labours so complicated, which, if the result be considered, would involve the most extensive and varied knowledge on the part of the agents." Deviations from what we should be inclined to call a normal or regular course are equally abundant throughout the vegetable and the animal world; take, for instance, the honeysuckle: in a dwarf hedge, it, shows no inclination to climb, but expands its blossoms within a yard of the ground, all that it seeks for them is exposure to the sun: move a plant of honeysuckle from that dwarf hedge into a dense coppice, where the hazel stems attain a height of twenty feet, and it will alter its character entirely: like a little snake it will twine round and round the stems, ascend to the very summit, and, surmounting the topmost foliage of the hazel, will expand its blossoms in the summer sun: the bees that were compelled by Huber to build their combs horizontally, instead of vertically, exhibited no higher degree either of instinct or reason than the honeysuckle; and thus will every plant accommodate itself to altered circumstances quite as readily as a bee: both act without tuition and without reflection; they do so because they have no choice. Then let us consider what is called erroneously the hexagonal form of a cell: the word does not in any way convey the meaning intended, which is that a transverse section of the beautifull cell formed by the bee presents a hexagonal outline, the cell itself being a hexahedral prism. There is in Nature a decided tendency to adopt this form, and it appears to me the result of crowding, not of design. The cells of Microgaster alvearius, cut through transversely, exhibit exactly the same type of structure, as indeed the name implies, and yet I believe even Mr. Smith would not contend that this result was produced by contrivance and reasoning powers on the part of the eyeless, footless, I might almost add shapeless, maggots, which are the sole architects. Again, I have found the eggs of a Pentatoma assuming an exactly similar form; in fact, so similar are these that many an entomologist has believed them the work of a Hymenopteron. Again, the eggs, which constitute the roe of a female herring, are always compressed when approaching maturity, into hexahedral prisms, a section of which would exhibit the constantly recurring hexagonal outline. Again, the lenses in the eyes of insects; surely no one will attribute any design or management on the part of the insect, in the structure of these constantly recurring hexagons. Again, the form of basaltic columns at Staffa and Fairhead are mere repetitions of bees' cells on a larger scale; the outline of a section is exactly similar. Again, in bubbles of soap and water, the outline of each bubble, when it impinges on others, is flattened; while, untouched by others, it is spherical. Now, in all these instances, and each instance is the type of a thousand others, there is no more evidence of individual design than in the formation of my hand. Design there certainly is, but design on the part of the great Workmaster—design to which the bee or the basalt yields alike unreasoning obedience.—*Edward Newman.*

Addendum to the Paper "On some New or Rare British Coleoptera" (Zool. 8998). By G. R. Crotch, Esq.

The reprint of Mr. Rye's article in the 'Zoologist' (Zool. 9002), renders it almost necessary for me to justify myself, if possible, from the charge of wilfully ignoring the Stephensian names in favour of Teutonic ones. An investigation of Mr. Waterhouse's Catalogue (exclusive of the Staphylinidæ) gives seventy-two species as Marshamian; of these I have rejected five, three as not being recognisable with certainty,and two from different views of synonymy: seventy-two species are also recorded as Stephensian; of these I have rejected seven, —five I consider insufficiently characterised, and two depend on the view taken of Linnean and Fabrician types: I have, however, inadvertently appended later authors' names to six species described by Stephens. It is, however, to the Staphylinidæ that Mr. Rye's remarks, as I suppose, principally refer, though it was, I should hope, sufficiently obvious that I had used the Erichsonian names throughout, and had rejected Sahlbergian and other names, as well as Stephensian ones. An analysis of the group shows that Mr. Waterhouse cites fourteen as described by Marsham; of these I recognize six: fifty-six are referred to Stephens; of these I have retained five. Here there would appear to be some ground for the accusation brought against me; but let us examine what is the evidence brought forward, on the strength of which we are to overthrow fifty-six names that have been in constant use for twenty years. In twenty-two of these cases Mr. Waterhouse acknowledges that the examples in the collection do not agree with the description; following, therefore, the example of Mr. Wollaston in the Atomariæ, and that of entomologists generally, these names would be rejected. In six cases, further investigation has shown that older names take the precedence of even the Stephensian ones. There remain, therefore, only twenty-eight names, having any claim to be restored, and many of these certainly appear to me very doubtful. But the same analysis forces upon us the difficult fact, that in no less than nineteen cases, does Mr. Waterhouse cite the avowedly prior Stephensian names as synonyms to the Erichsonian ones! What, then, is to be our guide?

Mr. Rye, to illustrate his position, has chosen an instance, the Homalota vicina of Stephens, which he states to be at once recognisable from the description in the 'Illustrations' and the 'Manual,' and quotes the latter *verbatim*. Admitting that this quotation sufficiently characterizes the insect, he has, I believe, since become aware that the 'Manual' was published in 1839, or the same year as the first part of Erichson's 'Genera et Species,' in which case I suppose few, even in this country, would accord priority to the 'Manual.' The 'Illustrations' were indeed published in 1832, but not only is the salient point of the diagnosis omitted, but the insect is said to be found in "Boleti, Norfolk and Suffolk," and neither locality being quoted in the 'Manual,' and the habitat being most unlikely, if not impossible.

Upon such slender grounds as these, which are not even detailed for them, are we to expect the continental workers to overthrow the name "umbonata," thoroughly characterized and universally adopted twenty years ago?

Of the genus Stenus, indeed, a careful investigation has been published in the 'Transactions,' by Messrs. Waterhouse and Janson, and report says that Mr. Rye is about to describe that group; we shall then probably have a detailed statement of his views upon their synonymy. G. R. Crotch.

[I have handed this addendum to Mr. Rye, in order that he may notice it in his reply, which reply, together with a postscript, written with especial reference to this addendum, now immediately follow, and with them the correspondence ceases: Mr. Rye having had the first hearing is entitled to the last.—*Edward Newman.*]

"*On some New or Rare British Coleoptera.*" By E. C. Rye, Esq.

I hasten to avail myself of Mr. Newman's permission to reply to Mr. Crotch's remarks upon my paper in the 'Annual' for the current year. It was certainly not my duty to apply to Mr. Crotch for information; he could only expect to establish as British the numerous species brought forward by him by publishing evidence of their specific identity and occurrence in England, and I cannot avoid remarking that a paper containing such information, and also stating precisely in what cabinets specimens of the respective species exist (or, if possible, could be seen) would have been of much more real service to Coleopterists than the publication of a Catalogue so soon after one has been supplied to us.

The existence hitherto, as reputed varieties, of some of the species in Mr. Crotch's 'Catalogue' was of course known to me, and I added to some of them a note to that effect, but it is surely incumbent upon him, and not upon me, to make some statement of the reason for reproducing them as separate species. There are four insects of this description particularly mentioned in Mr. Crotch's remarks, and of one of these, Choleva longula, *Kelln.*, I should like to have some information, both as to identity and locality, although aware of its being included as British in Murray's 'Monograph,' and of its generally reputed specific value. I should also like to know why a query is put after Philonthus trossulus, *Nordm.*; if Mr. Crotch were not sure about his insect, why did he bring it forward?

If I had passed over the records of Liodes axillaris, *Gyll.*, Paromalus parallelopipedus, *Herbst*, and Cerylon deplanatum, *Gyll.* (Zool. 8301), it would not have been surprising, since their names occur at random in a mere list of captures, with no heading to call attention to their being new to Britain; and surely the loose and undecided remarks on the latter insect are not enough to substantiate its specific identity. These were included by me in the main body of Mr. Crotch's additions, partly on account of want of space, and partly in the hope of obtaining a more detailed account.

I admit the mistake of placing Ptilium affine, *Er.*, in two places, not a very large error, considering the numerous alterations and additions to be made at the eleventh hour, and at the same time wish to mention two others, *viz.*, the omission of the common Aleochara lanuginosa, *Grav.*, in Mr. Crotch's 'Catalogue,' and of Stenus Rogeri, *Ktz.*, in my list of his additions. Information as to the latter would be acceptable.

Heterocerus arenarius, *Kies.*, Agabus sexualis, *Reiche*, and Ocypus Saulcyi, *Reiche*, may have been described from British specimens, but it would have been very little more trouble to Mr. Crotch (whose acquaintance with entomological literature is notoriously great), to have informed others, who, like myself, have no such opportunities as he, *where* and *when* these insects were taken, and whether they are worthy of the rank of species.

It is possible that I may have given Mr. Crotch an Atomaria to which the name fumata, *Er.*, had been provisionally applied, and yet that the insect brought forward in his 'Catalogue' should not be identical with Erichson's species. *I* certainly have never ventured to publish it as such, but Mr. Crotch has less scruples apparently, as he brings it forward on the authority "at least of a species bearing that name," to use his own words: surely he should have satisfied himself it *was* right, before publication.

The existence of certain species in the collections of Dr. Power or others was no evidence that they represented Mr. Crotch's species, until he published a statement to that effect.

Tychus ibericus, *Mot.*, Homalota celata, *Er.*, and Stenus pumilio, *Er.*, are recorded in the 'Annual' for 1855, it is true; but so are other species not now recognized. Has Mr. Crotch seen the specimens referred to in the notices of these insects, and satisfied himself as to their correct determination? I have some of the identical specimens of T. ibericus, *Mot.*, recorded in the 'Annual;' they were named by Motschulsky himself, and sent to me by Mr. Wollaston—nevertheless they are only light-coloured examples of the common T. niger, *Payk.*

As to classification, I expressly stated that freedom of opinion was open to all, and I do not see how the simple use of the word "foreign" implies an intention to stigmatize. Mr. Crotch's arrangement does not differ very much from that of Dr. Schaum's 'Berlin Catalogue,' the most conspicuous difference between them being that the former places the Brachelytra at the end. I have always understood that the placing the Staphylinidæ at the end of the Coleoptera was in connection with the circular and quinarian theory, which has long ago exploded.

I am quite ready to join in any expression of admiration and respect for the entomological merits of Mr. Wollaston, but I emphatically repudiate the insinuated assumption of authority by me; even if I did not do so, some latitude should be allowed by Mr. Crotch, who has not hesitated to change and reconstruct our list of Coleoptera, so recently, and with so much labour, prepared by one who is, to say the very least, much more experienced than himself.

As regards Ptilium saxonicum, *Gillm.*, and P. discoideum, *Gillm.*, I would remark that as I do not profess to know the Trichopterygidæ, I have, in preparing articles for the 'Annuals,' applied to the Rev. A. Matthews for any additions or corrections to be made therein; and as that gentleman has neither informed me of his opinion that these species ought to be omitted, or published any withdrawal of them, I certainly imagined they ought to be considered British.

The accounts given by Mr. Crotch for the species mentioned in his remarks are (with a few exceptions) scarcely satisfactory; the evidence of specific identity, and, in some cases, the localities, being not explicit enough.

I have seen one of Mr. Crotch's specimens of Cryptocephalus Wasastjernæ, *Gyll.*, and certainly agree with him in referring it to that species; nevertheless the thorax is not rugose at all, being most delicately scratched as with a needle.

Blaps Chevrolatii, *Sol.*, is synonymous with B. mucronata, *Latr.*, but I included it in the list of additions, since, in the 'Catalogue,' it was brought forward as separate.

I have seen one of Mr. Crotch's specimens of Stenus littoralis, *Thoms.*, and find it not to differ from my small examples of S. crassiventris, *Thoms.* (nigritulus, *Erichs.*). From Thomson's description, S. littoralis should, besides being smaller than S. crassiventris, have the legs pitchy, the elytra more closely, and the abdomen more thickly and strongly punctured. These differences I have as yet failed to see in any British specimen.

It will, I am sure, give much satisfaction to British Coleopterists, and to none more than myself, if the more extended notices promised by Mr. Crotch, enable them to retain with security all the species brought forward by him; but there will be nothing surprising if some of them should not stand, as the great energy shown by him in getting together so large a number must itself occasionally have hurried the work a little too much.

The somewhat reckless suppression of Stephensian names remains, however, as yet unjustified.

E. C. Rye.

284, King's Road, Chelsea, S.W.
April 7, 1864.

Postscript.—It seems to me that the only correct way of attacking such of the Kirbyan and Stephensian species as are desired to be repudiated would be to mention them, individually by name, and to give in detail the reasons for rejecting each of them. This could only be done by some one who is a thorough master of all procurable evidence, and who has a perfect knowledge of the insects themselves as species, and of the very specimens referred to in the descriptions, however old or in bad condition they may be. Of course any defender of them would require similar qualifications; and, taking even the Homalotas alone into consideration, Mr. Crotch will, I hope, pardon me for saying that neither is he, nor am I, competent to argue either way. I must say I consider the matter of priority set at rest, as far as it can be, by the statements of Mr. Waterhouse.

Admitting, for the moment, Mr. Crotch's sweeping and general statements, it appears by his own admission that throughout the Coleoptera he has passed over no less than seventy-seven names which we claim for British authors (of which six seem to be "inadvertently" deposed, though inadvertence in such a matter is scarcely pardonable). Mr. Crotch selects the Brachelytra as containing the most of these; and, allowing (for the sake of argument only) his deductions, there remain twenty-three, which, as he says, have any claim to be restored, and whereof many appear to him to be very doubtful. I again ask, Has Mr. Crotch himself endeavoured to sift all attainable evidence, even about these twenty-three only? Has he examined the *insects*, the types themselves, or is he conscious that an examination by him would in many cases be useless?

I am well aware that no one is better qualified than he for working out expeditiously and correctly any matters of reference, questions of date, or generally knotty points of entomological literature; still in this case such capabilities are not called into use, and I think myself justified in saying I believe he has *not* sifted the evidence afforded by the specimens in the Kirbyan and Stephensian Collections (especially the former), and that he has therefore only a theoretical opinion in the matter.

The very instance he gives of Mr. Waterhouse citing nineteen avowedly prior Stephensian names as synonyms to Erichsonian ones, is to my mind pretty conclusive evidence that in all others he adopted there were sufficient reasons for his doing so.

I merely selected Homalota vicina at random; any other species would doubtless have done as well.

It is true I was not (nor, I believe, was Mr. Crotch) aware that Erichson's work was published in two parts, or that the first portion, containing Homalota, came out in the same year as the 'Manual' of Stephens, which contains an avowedly sufficient description of the species in question; but, by Mr. Crotch's showing, the 'Illustrations' were published seven years before, and they contain a much more ample account than the 'Manual.' The "salient point of the diagnosis omitted" is absolutely nothing but a sexual difference, and surely a species ought not to be re-named because a subsequent observer supplements such a character to a description. In how many Erichsonian species do we see "mas latet" at the end? and yet the name stands, though others have afterwards found and described the male. It is a mistake to look in Stephens' Collection for Kirby's types; the Kirbyan species, of which this is one, were simply published by Stephens in the body of his work, the characters being of Kirby's own writing. I have examined Kirby's type, which is so ticketed and numbered that no error can arise; it is positively the H. vicina of the 'Manual,' and the umbonata of Erichson; and, being a female, I do not see how he *could* have described the male character from it, there being but that one. It must be remembered that insects now common, were, in the early days of working at Brachelytra, considered very rare. The expression "found in Boleti" is doubtless of Stephens' adding, being indeed in different type to the description; and this is borne out by the specimens representing vicina in Stephens' own collection, which are common fungus species. It is manifestly absurd to look in Stephens' Collection for Kirby's types, simply because Kirby's description was published in Stephens' book: this remark will apply also to divers other Kirbyan names, in other genera, which are proposed to be sunk.

As far as regards H. vicina, I have known it named as H. triangulum, *malgré* both Stephens and Erichson.

I myself informed Mr. Crotch that I was about to attempt short descriptions of the British Steni, and indeed he has kindly given me a list of localities of rare species, and also some remarks upon synonymy; but he knows I do not intend to enter into any statement of my views on the latter point, as my intention is to enable beginners to name their captures, and not to disgust them with the "disagreement of doctors" as to the vexed question of priority.

Mr. Crotch has also given me information on various points connected with the matters in question between us, from which it is quite clear to me that he represents in his 'Catalogue' the views of others, rather than his own convictions (founded on personal examination) as to the existence, specific or British, of divers insects therein enumerated.

E. C. Rye.

Coleoptera at Stockwell.—I have for some time been at some pains in compiling a list of the beetles that have occurred in our house, garden and field here. This list I give below in a tabulated form. The result, showing a total number of 460 species indigenous to us, is more favourable than I had expected, and is an unanswerable proof of the productiveness of the London district. Among my captures are a great many rarities, including some which neither I, nor any of my friends, have found elsewhere near London. Among the rarest I may mention Bembidium 5-striatum, Euthia plicata, Anommatus 12-striatus, Megapenthes lugens, Ischnodes sanguinicollis, Xylophilus populneus, Eryx atra, Barynotus obscurus, Opilus mollis and Euplectus Kunzei. It will be seen by the table below that the Brachelytra have, as might be expected, a grand majority; this is in some measure due to the existence of several hot-beds, on which the Philonthi, Xantholini and other similar genera swarm. Of the first-named genus I include in my list no less than twenty-five species, *viz.*:—

Philonthus splendens
,, intermedius
,, laminatus
,, carbonarius
,, punctiventris
,, æneus
,, politus
,, varius
,, albipes

Philonthus marginatus
,, sordidus
,, fimetarius
,, cephalotes
,, ebeninus
,, sanguinolentus
,, 2-pustulatus
,, longicornis

Philonthus varians
,, debilis
,, ventralis
,, discoideus
,, Thermarum
,, nigritulus
,, villosulus
,, procerulus

The Geodephaga are not inadequately represented, although they are mostly common species. The few species of Hydradephaga were ingloriously captured in a cow-tub. I have not worked much with the net, and therefore the Eupoda have but few representatives, but I anticipate doubling their number during the present season. I now subjoin the list referred to, premising, for the sake of statistical exactitude, that the collecting-ground covers an area of about three acres:—

Geodephaga	53	Heteromera	15
Hydradephaga	6	Rhyncophora	53
Brachelytra	166	Malacodermi	18
Necrophaga	70	Longicornes	4
Lamellicornes	22	Eupoda	16
Sternoxi	10	Pseudotrimera	27

—*H. Montague; Stockwell, April* 12, 1864.

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TO CORRESPONDENTS.

IT is with extreme regret that I have been compelled to carry over Mr. Healy's observations touching the Life-histories of Adela Degeerella, Incurvaria masculella, Solenobia inconspicuella and the Genus Lithocolletis, Mr. May's "Life-histories of Sawflies," and Mr. Dunning's Report of the Entomological Society's April Meeting, which was certainly the most interesting of the season. My own life-histories of British Lepidoptera are partially published in this day's 'ENTOMOLOGIST,' and will be continued in those which immediately follow. That Journal is resuscitated solely to relieve the 'Zoologist,' and Subscribers to the 'Zoologist' *will do me a personal favour* by taking the 'ENTOMOLOGIST' also.

A few papers still stand over; but I am happy to say all of them are of recent date. They are signed—John Dutton, C. Harvey Smith, Henry Hadfield, T. Brunton, H. W. Newman, Philip Crowley, C. E. Stewart, Robert Mitford, Thomas Clark, William Bennett, H. Harpur Crewe, A. Matthews, Henry L. Saxby, T. E. Gunn, C. J. Maurice, David Graham, J. A. Harvie Brown, Matthew Hutchinson, W. Hill Evans, William Ingall, E. M. Geldart.

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